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DOI:
10.1016/j.jogn.2016.11.017

Document Version
Peer reviewed version

Citation for published version (Harvard):
Sperlich, M & Taylor, J 2017, 'A Cycles-Breaking framework to disrupt intergenerational patterns of maltreatment and vulnerability during the childbearing year', *JOGNN - Journal of Obstetric, Gynecologic, and Neonatal Nursing*, vol. 46, no. 3, pp. 378-389. https://doi.org/10.1016/j.jogn.2016.11.017

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Journal of Obstetric, Gynecologic & Neonatal Nursing

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--Manuscript Draft--

Manuscript Number:	J16-191R1
Full Title:	A Cycles-Breaking framework to disrupt intergenerational patterns of maltreatment and vulnerability during the childbearing year
Article Type:	Principles & Practice
Keywords:	team science; transdisciplinary theory; child maltreatment; post-traumatic stress disorder; conceptual framework, perinatal mental health
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Abstract

We propose a *Cycles Breaking* conceptual framework to guide perinatal research, interventions and clinical innovations that can prevent or disrupt intersecting intergenerational cycles of childhood maltreatment and psychiatric vulnerability. The components of the framework are grounded in literature, clinical observations, team science collaboration and empirical research from numerous disciplines and specific to the childbearing year. Adoption of a transdisciplinary conceptual framework has the potential to speed progress on research on the intransigent social problem of intergenerational continuity of childhood maltreatment and psychiatric vulnerability.

Keywords: team science; transdisciplinary theory; child maltreatment; post-traumatic stress disorder; conceptual framework, perinatal mental health

Précis

The transdisciplinary cycles breaking framework has potential to guide perinatal care delivery and research by disrupting intergenerational patterns of childhood maltreatment and psychiatric vulnerability during the childbearing year.

Callouts

1. Pregnancy is a crucial point of intersection between generations where cycles of childhood maltreatment and psychiatric vulnerability are transmitted. Nurses and midwives are key practitioners in that intersection.
2. The cycles breaking framework is specific to the childbearing year, a critical window in the lifespan when transmission of maltreatment and psychiatric vulnerability can occur.
3. The cycles breaking conceptual framework is transdisciplinary and is designed to guide team science approaches in research on prevention and interventions.

Introduction

The importance of maternal mental health and the early mother-infant relationship for child health, development, and welfare outcomes has long been established. More recently, unresolved maternal trauma- especially in the form of posttraumatic stress disorder (PTSD) -has been designated as a risk factor for poor maternal experience of childbearing, poor postnatal mental health and difficulties in early parenting (Seng et al., 2013; Slade, 2006). The childbearing year is a point of intersection between generations and an optimal time to provide trauma-informed care (a framework for service delivery based on knowledge of how trauma affects people's lives and their needs) and PTSD-specific interventions (Harris & Fallot, 2001; Sperlich, 2015; U.S. Department of Health and Human Services [USDHHS], 2014). Nurses and midwives are ideally positioned to provide such care and intervention, but interprofessional collaboration is an ideal. Research to create interventions addressing the phenomena of intergenerational cycles of maltreatment and psychiatric vulnerability also will require participation of diverse disciplines, necessitating a team science approaches that capitalizes on the cross-disciplinary expertise of its members (Stokols et al., 2008). The different professions and disciplines taking part in research teams working on this topic may view it from diverse perspectives. The Science of Team Science (SciTS) is still emerging (Stokols et al., 2008), but an early step toward success for such teams is adopting a transdisciplinary conceptual framework that adequately delineates key components and propositions about the phenomenon of interest (Falk-Krzesinski et al., 2011). Key to the approach is to first determine the key concepts and assumptions that all within a team can embrace (Hall et al., 2008). The purpose of this paper is to explicate such a conceptual framework that our team is using and that might be useful to others.

Background

The Need to Address the Cycles

The consequences of childhood abuse and neglect can be persistent and long term, with devastating consequences that can be manifested in physical or mental ill health or disorder in adulthood (Shonkoff, 2012). Early experiences of maltreatment are associated with greatly increased risk of childhood mental health problems, such as conduct disorder and other disruptive behavioral disorders, and a range of mental disorders, drug use, suicide attempts, and risky behavior into adulthood (Norman et al., 2012; Twardosz & Lutzker, 2010). Adverse childhood experiences have been associated with morbidity and mortality beyond those effects that could be explained by behaviors alone, including lung cancer, auto-immune disorders, prescription drug use, chronic obstructive airway disease, and poorer health-related quality of life (Anda et al., 2007; Anda et al., 2008; Brown et al., 2010; Corso et al., 2008; Dube et al., 2009; Felitti et al., 1998; Hetzel & McCanne, 2005).

[Insert Callout 1]

The burden of physical and mental health disease caused by early maltreatment experience exerts lifelong pressure on health and social services, criminal justice and law enforcement systems, housing and community safety (Jordan & Sketchley, 2009; Lynch & Cicchetti, 1998; Shonkoff et al., 2010; Stein, Leslie, & Nyamathi, 2002; Widom, 1989). Responsive to this burden, there is a growing emphasis in pediatric research on maltreatment, parental mental illness, and substance use as forms of toxic stress; this is informing research and policy agendas across the world, and reflects a growing recognition of the cumulative burden and costs of maltreatment (Shonkoff et al., 2012).

The symbiotic relationship between brain development and environmental stimuli means that although inherited genetic potential predisposes children to certain characteristics and

abilities, it is environmental influences and contexts which determine the ultimate expression of these potentials (Jordan & Sketchly, 2009). This has broadly been described as the gene by environment interaction, which proposes that phenotypic variation is the result of the interaction of *both* nature and nurture (Rutter, 2006). Early exposure to stress and trauma causes physical effects on neurodevelopment which, combined with environmental risk factors, may lead to changes in the individual's long-term response to stress and vulnerability to psychiatric disorders (Glaser, 2000; Glaser, 2014; Lubit et al., 2003). The attachment relationship between an infant and primary caregiver has a profound impact on child functioning and future development (Fearon et al., 2010; Siegel, 2001). Exposure to trauma, including abuse, neglect, and violence, affects every dimension of an infant's psychological functioning (Lubit et al., 2003; Perry, 2002). Caring for an infant may be challenging for any parent; especially with infants who are experiencing incessant crying, an inability to be soothed, and those with feeding and sleep problems. Women with unresolved trauma, especially those with PTSD, may be triggered by such behaviors and less able to cope in ways that regulate rather than disorganize the infant (Swain et al., 2012).

Thus, while recent years have seen increased sophistication in integrating trauma theory and attachment theory, there has not yet been an organizing framework produced that can guide studies by collaborators who occupy various professional standpoints or bring diverse expertise (Twardosz & Lutzger, 2010). The need for such a framework is suggested by noting that the authors of the 34 references just cited come from 35 different academic disciplines or clinical professions, as diverse as economics, educational psychology, epidemiology, immunology, infant mental health, internal medicine, kinesiology, microbiology, nuclear medicine, nursing, psychology, psychiatry, public health, pediatrics, public policy, social work, and sociology.

Although extant theories (e.g., trauma theory, attachment theory) will inform such studies, a conceptual framework to inform longitudinal measurement and analyses that is very practical could be helpful within these team science collaborations. Practitioners at the cutting edge of care delivery can draw on this framework to inform clinical innovation and we will end the paper by offering some examples of clinical utility.

Perinatal PTSD and Depression

Focus on PTSD as a common perinatal mental health concern fuels a paradigm shift (Sperlich, 2015). Until recently, most attention has been pointed toward perinatal depression. Although *stressful* life events have been linked to depression onset, depression *per se* has not been seen as a *trauma*-related disorder (Heim & Binder, 2012). Addressing perinatal depression is considered important because maternal depression is associated with impaired parenting and adverse developmental and mental health outcomes in the child; i.e., perinatal depression contributes to the cycle of psychiatric vulnerability. Addressing PTSD is important for the same reason. But PTSD's defining characteristic is that it stems from a trauma exposure, and this connects PTSD to the other intergenerational cycle: the cycle of abuse.

While mental health professionals are familiar with the association between PTSD and depression, this association is perhaps less known within perinatal professional circles. In the *Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV)* taxonomy PTSD was classified as an anxiety disorder, and depression was considered a common comorbidity (American Psychiatric Association [APA], 1994). In the *Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5),* PTSD is classified as a trauma-related disorder, with symptoms going well beyond anxiety; and depressive symptoms have been incorporated into the PTSD syndrome itself in a new symptom cluster focused on low mood and cognitive distortions

(APA, 2013). Thus perinatal mental health conceptualizations now can shift to reflect (as in Figure 1) a view of PTSD and depression that fits three groups of women: those with depression that is rather more endogenous or *not trauma-related*; those with PTSD that is from other types of exposures but *not maltreatment-related*; and the group in the middle who are affected by some extent of PTSD and/or depression that *is* related to maltreatment trauma. This is the group of mother-fetus or mother-infant dyads whose experience the Cycles Breaking framework seeks to depict.

[Insert Figure 1]

Although much more is known about depression's effects on intergenerational outcomes, evidence from childbearing and early parenting studies is accumulating to implicate PTSD in adverse outcomes as well, including data from our own work which will be used next to illustrate the framework's propositions. The focus on the effects of childhood maltreatment trauma and PTSD did not begin until the late 1990's and early 2000's; yet it is important to point out that emerging findings that are PTSD-specific do not invalidate what we have learned from previous perinatal depression (and anxiety) studies (Sperlich, 2015). Rather, they increase the accuracy of our understandings. Childhood maltreatment trauma and PTSD likely were latent variables that were acting, but unmeasured, in prior studies that focused on perinatal depression and anxiety.

The Cycles Breaking Conceptual Framework

We propose a framework that will serve the practical function of organizing research projects, interventions, and clinical innovations focused on prevention or treatment to disrupt the intergenerational cycles of abuse and psychiatric vulnerability. The conceptual framework is longitudinal, accounts for the trauma exposure of maltreatment and the trauma sequelae of mental health conditions, and it uses time points or events particular to the childbearing year

(embedded in the mother's and infant's lifespans) as its components. It is particularly pertinent for those working directly with mothers in the perinatal period.

[Insert Callout 2]

The propositions are the links between the component events or time points (for example, the link between "Pre-existing PTSD/MDD" and "Pregnancy PTSD/MDD," which refers to the time period between when a woman becomes symptomatic with these mental health challenges and when she becomes pregnant). These are moments when impacts of earlier events can be determined in relation to later events, and when prevention or treatment interventions could be applied to break the cycles.

[Insert Figure 2]

Sperlich, Seng, and colleagues first depicted the Cycles Breaking framework to organize the review of literature for a research report of PTSD's effects on mental health and bonding outcomes in the *Journal of Midwifery and Women's Health* (2013; reprinted with permission as Figure 2) (Seng et al., 2013). The statistical analyses reported in that paper included stepwise logistic regression models predicting postpartum mental health and bonding outcomes, and these were organized to be consistent with the framework. The circular depiction of the cycle illustrates predictive pathways that show how a child's poor outcomes become a woman's trauma history when she in turn becomes the mother. We also use an image showing the components and propositions in a linear trajectory (Figure 3). While the framework was initially organized around predictive pathways, we suggest in this paper that it could also be used further as an intervention model; intervening at any point in this cycle might shift the life course for individuals, and multiple interventions might have cumulative benefits.

[Insert Figure 3]

The literatures underpinning the components and propositions of the framework are vast (see Seng et al., 2013; Seng & Taylor, 2015). It codifies what already exists as a powerful metaphor ("the cycle of violence"), and draws from worldviews as disparate as those of neuroscientists, social workers and psychoanalysts. Its transdisciplinary utility comes from being able to go forward together from an accepted, clinically, scientifically and socially adequate depiction that alludes to a narrative of the phenomenon that is coherent - whichever professional, statistical, or lay story one uses as explanation.

Definitions and Assumptions

A first step in explicating this framework is to define terms and state broad assumptions about the framework as a whole. The following definitions explain the concepts and assumptions that undergird the cycles breaking framework.

Cycle of abuse. We use the broad term *cycle of abuse* to connect two concepts. Abuse is defined as maltreatment of the child by parents, family members, or other caregivers via commission of harms such as physical or sexual violations of body integrity or psychological violations of self-esteem or via omissions such as emotional or physical neglect. The term cycle conveys that abuse tends to run in families, with parents' unresolved experiences of childhood abuse affecting the parenting of their own children in turn, including missed opportunities to protect the child from abusive people in the (extended) family.

Cycle of psychiatric vulnerability. We use the broad term *cycle of psychiatric vulnerability* to convey two concepts. Psychiatric vulnerability is defined as a state wherein nature and nurture in combination convey risk of mental health morbidity, distress and impairment. Again, the term *cycle* conveys that psychiatric vulnerability is intergenerational; with parents' mental health problems affecting the mental health of their children in turn.

Intersecting. These two cycles intersect. As PTSD becomes a greater focus of perinatal mental health, the relationship of these two cycles becomes more visible since maternal abuse history has become more clearly linked to maternal mental health status. This is consistent with the diagnostic requirement to link trauma history with the PTSD syndrome.

Intergenerational. Both cycles can affect fetal, infant and child outcomes as part of a pattern that repeats across generations. A child's experiences of abuse and mental health impairment can echo that of their parents and grandparents.

Nature, nurture and context. There are biological and social factors involved that could be added to this framework. Toxic stress, developmental origins of health and disease and life history or life course research arenas rest on biological and evolutionary and ecological theories that highlight intergenerational patterns at the population level. Our focus is on elaborating a framework for psychosocial or clinical research and intervention. But the Cycles Breaking framework would be compatible with these biological and population research approaches.

Focus on the woman. Focus on the woman who will become the mother is appropriate considering the opportunity presented by frequent perinatal clinical contact, which begins in pregnancy and includes a focus on midwifery and obstetric care. Adaptation to include or focus on fathers and parenting couples would help to modify aspects of the woman's social environment and may improve effectiveness of woman-centered interventions (Fisher, Wynter, & Rowe, 2010).

Circularity. The metaphors of cycles emphasize circularity, which implies not only that things repeat, but that it is possible to stop the cycling (Figure 2). There is the notion that circles can keep rolling unless something slows or stops them.

Causality. For practical reasons, including habits of mind about causal reasoning, we also connect specific points in the cycles as a vector through time (Figure 3). So we start with the woman's childhood maltreatment history and move through her pre-pregnancy (lifetime) mental health status, pregnancy mental health status, birth events, postnatal mental health and bonding status, to the infant's socioemotional status, on to that child's welfare, and on again to the child's future childbearing and parenting of the next generation.

Trajectories. Although we have adopted the vocabulary of breaking the cycles, we expect that effects of prevention or intervention efforts likely would, in fact, be more akin to influencing or altering a trajectory or life course. Figure 4 depicts theorized trajectories with and without intervention.

Insert Figure 4 here

Cross-cutting effects. In keeping with the concept of intersecting cycles, we would expect that intervening to prevent or ameliorate abuse would prevent or ameliorate mental health impairment and vice versa. So measuring both in tandem whenever possible permits awareness of synergies, in addition to keeping a focus on collaborating across health and social care systems.

Contextual factors. The cycles spin in contexts which are essential to take into account. These could be defined from the biological level (e.g., the uterine environment, epigenetics) to the sociological level (e.g., structural inequalities).

Relationship impacts. Family of origin, partner, social network and health and social care professional relationships all affect the mother and child, for better or worse. Dyadic analyses may be useful for capturing effects of provider-client, parent-child, grandparent-parent, grandparent-child, and partner-partner influences.

Reciprocity. Consistent with a focus on dyadic relationships is the notion of reciprocal effects and uncertainties about causal directions. For example, it need not be assumed that maternal postnatal depression causes impaired or delayed bonding. It could as easily be the case that impaired or delayed bonding causes depression in the mother who is experiencing a connection with her baby that is less positive than she expected.

Components

The second step in framework explication is to label components adequately so they convey a common meaning and can be operationalized for clinical, evaluation, and research purposes. Following is an explanation of the components of the cycles breaking framework (see Figure 2).

The first few components include the mother's child abuse trauma and her pre-existing (i.e., pre-pregnancy) mental health status, including PTSD and major depressive disorder (MDD). This association between trauma and mental health sequelae has a large body of literature to support it (Molnar, Buka, & Kessler, 2001). The last few components, going from impaired bonding and postpartum depression, to problems in the dyadic relationship, to greater risk for maltreatment of the child and exposures to other types of trauma also have a large body of research (Van Ijzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). The components that fall between conception and the postpartum period have less research linking them (Seng et al., 2013; Slade, 2006). There are now several qualitative and quantitative studies linking past abuse and pre-pregnancy PTSD with pregnancy PTSD and MDD (Cook et al., 2004; Kim et al., 2014; Montgomery, Pope, & Rogers, 2015; Morland et al., 2007; Rodriguez et al., 2008; Smith et al., 2006; Seng et al., 2009; Sperlich & Seng, 2008). Pregnancy PTSD and pregnancy MDD also are now known risks for postpartum mental health morbidity (Leigh & Milgrom, 2008; Lev-Wiesel

et al., 2009; Seng et al., 2013; Söderquist et al., 2009). There is also a strong qualitative literature and an emerging empirical basis for understanding that birth and adverse neonatal outcomes can be traumatic events that also predispose to mental health and relational sequelae (Ayers et al., 2009; Denis, Parant, & Callahan, 2011; Harris & Ayers, 2012; Kitzinger & Kitzinger, 2007; Shaw et al., 2009). The components encompassing the period of pregnancy and childbearing provide unique windows of opportunity for preventative measures and potential intervention, given that women are typically engaged with healthcare professionals on a regular basis during this timeframe.

Many perinatal research projects, including intervention studies, put the focus on the mother, infant, or dyad. However, it is important to keep the partner and family of origin in view as either potential risk or protective elements (Bradley & Cabrera, 2014; Swain et al., 2014)

Propositions

The third step in theory explication is to state the propositions that link the components. To facilitate this process, we have labeled each proposition as A through F. We illustrate ideas for intervention research projects in relation to each proposition in Table 1.

[Insert Table 1]

Although there remain many gaps in answering the specific questions we raise in Table 1, there are a small number of trauma-specific interventions for women with maltreatment histories that have been developed and which are of interest to nurses and midwives and other clinicians. However, most of these are not focused specifically on childbearing. At proposition B for example, there is Seeking Safety; a 26-session cognitive behavioral therapy (CBT) program for dual diagnosis of PTSD and substance use disorder (Najavitz, 2007; Hein et al., 2010). At preposition C we could utilize DOVE (Domestic Violence Enhances Home Visiting); a home-

visiting program specific to intimate partner violence in pregnancy (Sharps et al., 2013). A further example is at preposition F, with the Circle of Security (Ramsauer, Gehrke, Lotzin, Powell, & Romer, 2011); an attachment-based intervention for mothers with postpartum illness. There are many others that can illuminate some of these prepositions, but there are also lacunae. This is a starting point to determine what those gaps are, what might already fit, and what questions we still need to both ask and answer.

Discussion

Cycles of violence is common parlance in the helping professions, and it is generally recognized that vulnerability for mental health problems tends to run in families. There are already numerous research initiatives, social service programs, and policy initiatives working on various regions of these intersecting cycles. An excellent example of such research is a recent article by Bianchi, Cesario, & McFarlane (2016), which is concerned with "interrupting" intimate partner violence during pregnancy, and provides recommendations for identification, assessment and health care provider training, as well as exploring essential components of an assessment program.

The cycles breaking framework seeks to incorporate such efforts under one rubric. What we propose is coming to agreement that the world of trauma and its effects is round, and that we direct our focus toward the childbearing year to catalyze synergistic efforts to break these intersecting cycles. Taking the time to pause and model this utilitarian circular map of the world of trauma and its sequelae provides opportunity to foster transdisciplinary cooperation on the enormity of the problem.

[Insert Callout 3]

A limitation of the cycles breaking framework is that while it is expansive, it is not a map of the whole universe of other direct, mediating and moderating factors that bear influence on the lives of families. Trauma is not implicated in every social problem or psychiatric diagnosis. Social and physical determinants of health beyond trauma are many, and include the relative availability of resources such as employment, adequate housing and nutritive food, access to quality education and health care, the influence of social support, the effects of poverty and exposure to crime, and concentrated exposure to toxic substances and other physical hazards. Individual preferences regarding treatment seeking are also important barriers to realizing the promise of such a framework for interrupting cycles. Compounding these influences are the effects of structural inequalities like racism, segregation, income and educational inequality, and the as-yet inadequately measured effects of cultural traumas. All of these social problems have their own cycles that spin misfortune, as well. Yet, separating out the influence of trauma and its sequelae gives us an opportunity to focus our energies towards changing lives and generational trajectories. Orienting our map to the childbearing year capitalizes on the frequency of clinical interaction with women at this sensitive window of opportunity, and the natural proclivity toward change and renewal that may be a feature of many women's experience.

Summary

Disis and Slattery, in titling their 2012 article for *Science Translational Medicine*, urge that multidisciplinary team science is the "road we must take," and underscore the importance of translational research:

> "The past decade has brought an enormous increase in our knowledge about the etiology and pathogenesis of many human diseases. Why aren't we realizing more substantial

clinical benefits from this explosion of discovery? When will we see sustained and tangible improvements in human health" [Disis & Slattery, 2010, p.1]?

We have delineated the definitions and assumptions, components and propositions of this practical cycles breaking framework, with the aim of providing common ground for the organization of transdisciplinary research projects which share the goal of disrupting intergenerational cycles of abuse and psychiatric vulnerability. Proof of usefulness will be seen if other teams adopt this framework so that there will be the possibility of comparing, synthesizing, and conducting meta-analyses of findings across projects. Benefits also may be evident if teams are long-standing, productive, and advance to interventions research, translating across the efficacy to effectiveness to implementation science translation process.

There is potential utility for clinical practice, in that we anticipate that the framework could guide care planning by nurses, midwives, nurse practitioners, obstetricians and pediatricians by encouraging the maternity care team to use a set of interventions targeting multiple time points and fostering coordination of care across the pre-conception through parenting continuum. We also see potential utility for policy development. The framework could allow stakeholders to indicate where interventions are being aimed, and facilitate trans-disciplinary work to become a "norm" in perinatal research and clinical care. It would also have the advantage of encouraging further development of "upstream" interventions for preventing the development of child abuse and neglect in the first place, like those called for in the recently released technical bulletin from the Centers for Disease Control (Forston Kelvers, Merrick, Gilbert, & Alexander, 2016) and the World Health Organization's (2016) strategy for ending violence against children.

We hope that this cycles breaking framework will organize forward motion in perinatal research and practice to address the trauma-related needs of women and their families. We offer it as a map on the road to understanding and addressing intersecting intergenerational cycles of abuse and psychiatric vulnerability during the childbearing year.

Table 1

Framework Propositions and Corresponding Potential Interventions

Proposition from cycles breaking framework	Potential intervention to test at each point
A. A woman's childhood maltreatment history can lead to pre-pregnancy PTSD and MDD	Modify a program for girls at risk for teen pregnancy to be trauma-informed and address PTSD and other maltreatment sequelae. Research question: Does modifying a risk-reduction program for teen girls to be trauma informed improve their outcomes?
B. Pre-pregnancy PTSD and MDD can lead to pregnancy PTSD and MDD	Identify women with a maltreatment history and PTSD at intake to prenatal care and offer PTSD-specific interventions in a context of trauma-informed maternity care. Research question: What are best practices for screening and offering intervention to women starting prenatal care?
C. Pregnancy PTSD and MDD can lead to postnatal PTSD and MDD	Screen women for trauma exposure and PTSD. Enhance perinatal home visiting programs with PTSD-specific elements to

	provide in the context of a long-term clinical relationship. Research question: Does adding psychoeducation about PTSD to home visiting programs improve outcomes for the subset of families where a mother or father has a maltreatment history?
+ Birth trauma and adverse outcomes for the infant can be an additional trigger for subsequent problems.	Provide specialized labor support to help women with PTSD symptoms cope with triggers in labor. Provide PTSD-specific support to families with perinatal loss or adverse infant outcomes (e.g., in NICU settings) Research question: Do doulas with extra training about PTSD improve the birth experience and PTSD symptomatology postpartum? Research question: Can neonatal critical care nurses identify symptomatic parents?
D. Postnatal PTSD and MDD can lead to delayed or impaired maternal bonding,	Assess PTSD symptom levels prior to discharge with women who have a positive history and provide follow-up.

AND delayed or impaired bonding can also lead to depression, so reciprocity should be considered.	Assess depression symptoms and bonding concerns early among women with PTSD. Research question: Can PTSD treatment in the earliest weeks improve bonding? Research question: Can providing parenting support in the earliest weeks for at-risk dyads, improve maternal mental health?
E. Postnatal PTSD and MDD AND delayed or impaired bonding can lead to impairment in the dyadic relationship over time	Consider women with maltreatment history who have any psychiatric diagnosis to merit extra support to learn how to regulate their infant and promote sensitive, reflective and protective parenting. Research question: Can PTSD-specific mothering groups with a clinician leader or home-based interventions improve sensitive parenting and infant mental health and safety?
F. Impaired dyadic relationship can lead to greater risk for abuse, neglect, and other trauma exposures.	Identify impaired dyads early and provide intensive nursing and child welfare support as prevention strategies. Research question: Do positive professional relationships enhance maternal disclosure of difficulties in keeping the infant safe?

+ Remember that the partner/father may also be impaired.	Include a focus on partner/father well-being and determine if intervention to support the father or to increase mother-child safety are warranted. Consider interventions that focus on support for couples and fathers. Research question: Does including fathers with a maltreatment history in home visits improve maternal and infant outcomes?
+ Remember that family of origin may not be a safe source of social support or childcare.	Ask explicitly if the people who were involved in the mother's abuse when she was a child are involved in her infant's life and whether they are safe now. Research question: Does a brief program to help mothers identify safe respite care improve child outcomes?

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Figure 1

Figure 1: Venn Diagram of Maternal PTSD and Depression

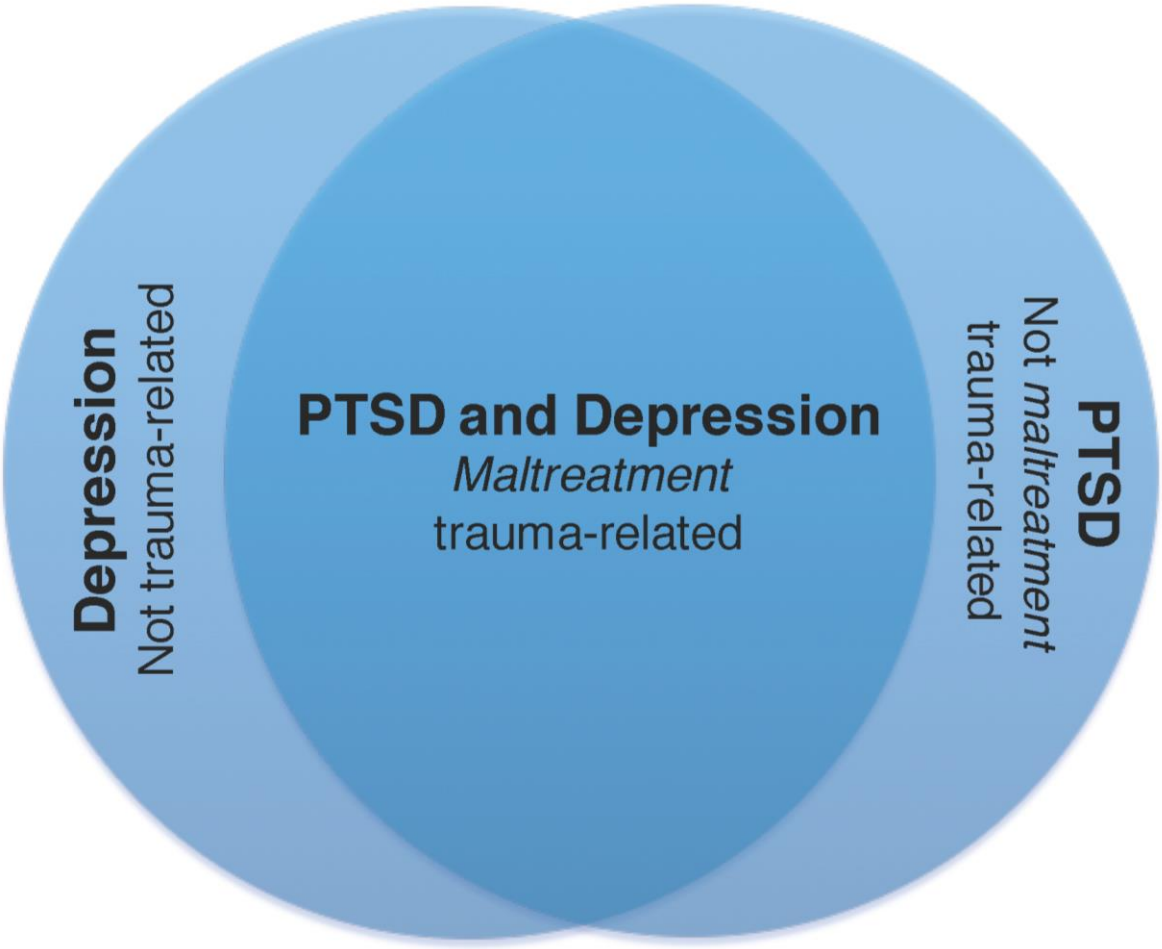


Figure 2. Schematic depiction of intergenerational cycles of abuse and psychiatric vulnerability. Capital letters correspond to elements of literature review suggesting predictive pathways. The broken chain links depict potential windows of opportunity for intervention to break these cycles.

PTSD = Posttraumatic stress disorder
MDD = Major depressive disorder

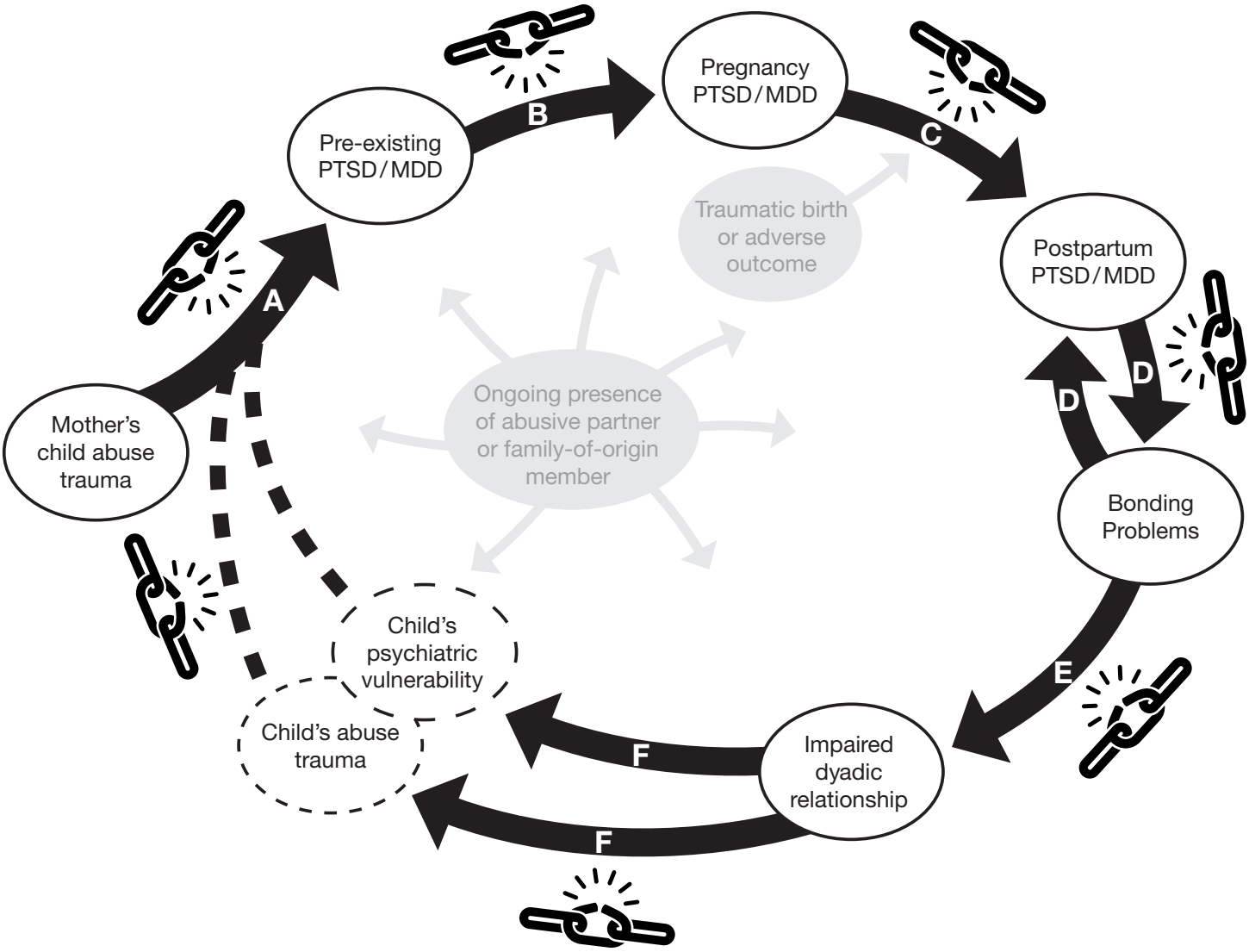


Figure 3

Figure 3: Linear Depiction of the Intergenerational Cycle of Abuse and Psychiatric Vulnerability

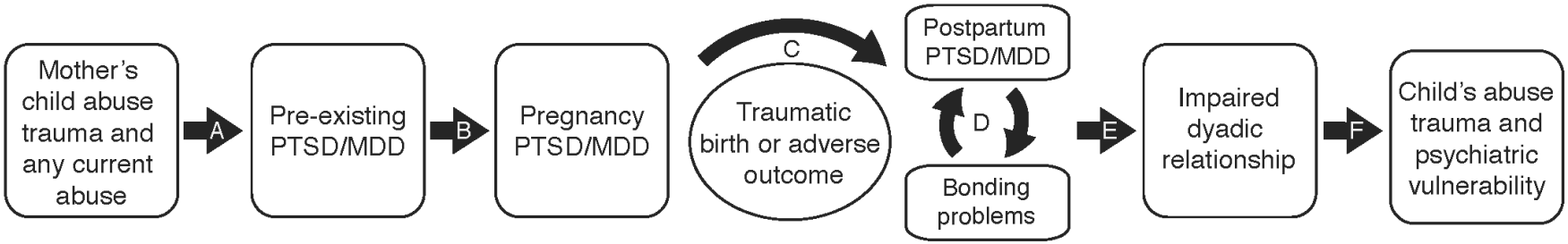
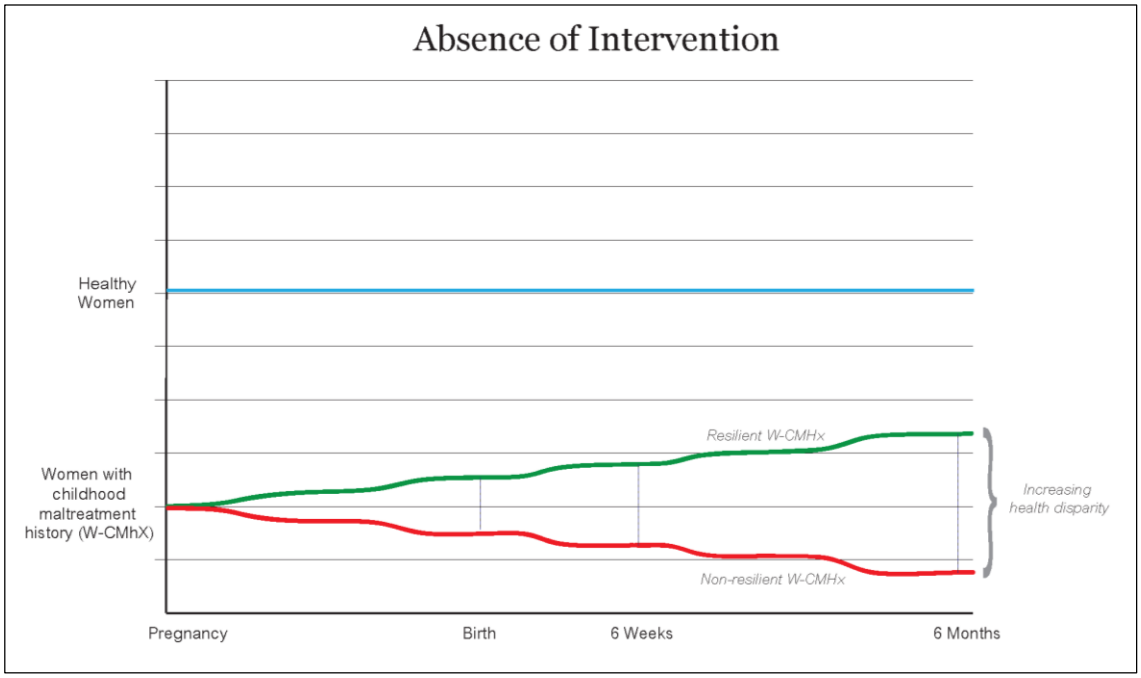


Figure 4: Improved Trajectories for Women with History of Childhood Maltreatment

a. Trajectories without Intervention



b. Trajectories Improved with Intervention